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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/876,319

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Takuya Adachi

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EXAMINER

TUCKER, WESLEY J

ART UNIT

PAPER NUMBER

2623

DATE MAILED: 06/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/876,319	Applicant(s) ADACHI ET AL.	
	Examiner Wes Tucker	Art Unit 2623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 November 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,7-31,36-46 and 51-71 is/are pending in the application.
- 4a) Of the above claim(s) 7-30,36-45 and 51-56 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,31,46 and 57-71 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>1-5-05 and 2-18-05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendments and Arguments

1. Applicant's response to the last Office Action, filed November 3rd 2004, has been entered and made of record.
2. Applicant has amended claims 1, 31 and 46. Claims 2-6, 32-35 and 47-50 have been canceled. New claims 57-71 have been added. Claims 7-30, 36-45 and 51-56 were previously withdrawn. Claims 1, 31, 46 and 57-71 remain for examination in the present application.
3. Applicant's amendments and arguments have been fully considered and persuasive in view of the newly amended claims. The rejections previously presented under 35 U.S.C. 112 first paragraph and 35 U.S.C. 102(e) are withdrawn. However the amendments have necessitated new grounds of rejection in view of U.S. Patent 4,983,036 to Froelich. The rejection is accordingly made final.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 31, 46, 57-59, 62-64 and 67-69 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of U.S. Patent 4,641,350 to Bunn and U.S. Patent 4,983,036 to Froelich.

With regard to claim Bunn discloses an image collation apparatus comprising an image database for recording a second image as a registered image (column 2, lines 34-37). The second image is interpreted as the initial reference arrays.

Bunn also discloses collation means for obtaining a plurality of coincidence ratios by collating a first image with the registered image (column 2, lines 37-40). The degrees of correlation obtained from the comparisons are interpreted as the coincidence ratios.

Bunn further discloses a coincidence ratio extraction means for obtaining a peak coincidence ratio from the plurality of coincidence ratios obtained from said collation means (column 3, lines 22-25). Bunn disclose obtaining the peak correlation values obtained form the plurality of correlation values.

Bunn further discloses determination means for determining that the first image and the registered image are identical, if the extracted coincidence is found to exceed a predetermined threshold (column 2, lines 42-45).

Bunn does not disclose that the peak coincidence ratio determined is a minimum that is compared and found smaller than a predetermined threshold.

Froelich teaches using minimum correlation values found smaller than predetermined minimum thresholds in order to determine that images are identical

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(column 3, lines 53 – column 4, line 23). Fig. 4 shows both positive and negative thresholds that if exceeded indicate a match. Froelich also teaches that the peak occurs as a match is determined can be either positive or negative, the negative indicating a minimum correlation value (column 4, lines 2-15). The minimum correlation as taught by Froelich is unique to a match being found as the rest of the time the correlation will be fairly uniform and unremarkable and harder to distinguish or will appear simply as noise (column 3, lines 62-67).

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to use a minimum threshold for indicating a minimum coincidence or correlation as taught by Froelich in order to better indicate a match in the correlation determination of Bunn.

With regard to claim 31, Bunn discloses an image collation method comprising recording a second image as a registered image (column 2, lines 34-37).

Bunn further discloses collating a first image with the registered image to obtain a plurality of coincidence ratios (column 2, lines 37-40).

Bunn further discloses extracting a peak coincidence ratio from the plurality of coincidence ratios obtained from collating (column 3, lines 22-25).

Bunn further discloses determining that the first image and registered image are identical if the extracted peak coincidence ratio is compared with a predetermined threshold value (column 2, lines 42-45).

Bunn does not disclose that the peak coincidence ratio determined is a minimum that is compared and found smaller than a predetermined threshold.

Froelich teaches using minimum correlation values found smaller than predetermined minimum thresholds in order to determine that images are identical (column 3, lines 53 – column 4, line 23). Fig. 4 shows both positive and negative thresholds that if exceeded indicate a match. Froelich also teaches that the peak occurs as a match is determined can be either positive or negative, the negative indicating a minimum correlation value (column 4, lines 2-15). The minimum correlation as taught by Froelich is unique to a match being found as the rest of the time the correlation will be fairly uniform and unremarkable and harder to distinguish or will appear simply as noise (column 3, lines 62-67).

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to use a minimum threshold for indicating a minimum coincidence or correlation as taught by Froelich in order to better indicate a match in the correlation determination of Bunn.

With regard to claim 46, the discussion of claim 31 applies. The fingerprint identification system of Bunn is considered to be stored within a computer as a program containing instructions.

With regard to claim 57, Bunn discloses the apparatus according to claim 1, wherein said first image is obtained by capturing a test image (column 2, lines 46-50).

The obtained image is the MxN scan obtained and is considered a test image, as it is an image to be tested against the stored registration image.

With regard to claim 58, Bunn discloses the apparatus according to claim 1, further comprising:

an image input unit for capturing a test image (Fig. 1, element 10), wherein said first image is obtained by dividing said captured test image into a collation unit (column 2, lines 34-36 and 50-56). The "collation unit" in Bunn is considered to be the sub-arrays composed of binary 1s and 0s used to compare individual elements of the sub-arrays.

With regard to claim 59, Bunn discloses the apparatus according to claim 1, wherein the said collation unit is a pixel unit (column 2, lines 34-36 and 50-60). The "elements" of the sub-arrays are represented with the binary values determined from the scanner.

With regard to claim 62, the discussion of claim 57 applies.

With regard to claim 63, the discussion of claim 58 applies.

With regard to claim 64, the discussion of claim 59 applies.

With regard to claim 67, the discussion of claim 57 applies.

With regard to claim 68, the discussion of claim 58 applies.

With regard to claim 69, the discussion of claim 59 applies.

Claims 60, 61, 65, 66, 70, and 71 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of U.S. Patent 4,641,350 to Bunn and U.S. Patent 4,983,036 to Froelich and further in view of U.S. Patent 5,633,947 to Sibbald.

With regard to claim 60, Bunn and Froelich disclose the apparatus according to claim 1, and Froelich discloses wherein said collation includes parallel movement processing (column 3, lines 55-65), but does not disclose rotation processing. Sibbald discloses rotation processing (column 4, lines 57-61). It would be advantageous to enable rotation processing in order to collate images of fingerprints that were not captured at the same respective angle. Therefore it would have been obvious to enable the rotation processing in the collation taught by Sibbald in the collation of Froelich to enable the collation of image captured at different respective angles.

With regard to claim 61, Bunn and Froelich disclose the apparatus according to claim 1, but does not disclose wherein when said collation processing of a predetermined threshold value ends, the collation processing including parallel

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movement or rotation to the next collation range is performed. However in the threshold setting process described in Froelich, there are multiple thresholds set already and it would be an obvious variation to set different thresholds or multiple thresholds according to need or desired effect. Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to use any number or values of thresholds to determine collation according to need or desired effect. The combination of rotation processing in addition to the parallel movement processing of Froelich is discussed in regard to claim 60.

With regard to claim 65, the discussion of claim 60 applies.

With regard to claim 66, the discussion of claim 61 applies.

With regard to claim 70, the discussion of claim 60 applies.

With regard to claim 71, the discussion of claim 61, applies.

Conclusion

Applicant's amendment necessitated the new grounds of rejection presented in the Office Action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wes Tucker whose telephone number is (571)272-7427. The examiner can normally be reached on 9AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on (571)272-7414. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.


Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Wes Tucker

4-13-05


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